Nuclear Energy's Role in Climate Change Policy

The consensus of the international community of climate scientists is that humans are having an adverse influence on the climate system.[1] While the state of climate science is still maturing, the American Nuclear Society (ANS) believes that the risks presented by rising temperatures are sufficiently large to warrant enactment of policies designed to limit emissions of greenhouse gases into the atmosphere as a means of abating these risks. ANS therefore supports the principal objective of the recent Paris Agreement[2] along with state and national initiatives designed to reduce greenhouse gas emissions from human activities.

ANS supports policies designed to reduce greenhouse gas emissions that are performance-based and technology neutral, consistent with the position of the United States (U.S.) delegation to COP21.[3] Further, ANS supports the outcome of COP21, which established that nuclear energy (which provides more than 60 percent of the U.S. non-emitting generation) should be considered on the same basis as other non-emitting energy technologies as nations seek to meet their emission commitments. ANS believes that nuclear energy has a crucial role to play in addressing the global need to reduce emissions and that emission-reduction policies should neither favor nor limit any one energy source over another. Instead, such policies should evaluate energy sources based upon their ability to contribute reliably to meeting emission-reduction targets.

Nuclear energy delivers economically-competitive electricity with no greenhouse gas emissions during electricity generation operations and has among the lowest lifecycle greenhouse gas emissions of any energy source.[4,5] Nuclear energy is the only energy technology with worldwide potential for growth that has a proven record of delivering large amounts of electricity both reliably and without greenhouse gas emissions. ANS believes that nuclear energy is an important tool in reducing emissions and will make major contributions under well-composed technology-neutral emission-reduction policies.

The U.S. government and many state governments have adopted policies to reduce emissions, but to date, few of the policies encourage the use of nuclear energy. Some renewable and clean energy provisions mandate preferential treatment for specific technologies and/or fuel sources, which in effect precludes equal support for nuclear energy despite its low-carbon benefits. ANS believes that performance-based, technology neutral policy approaches must be the standard and are the best way to encourage innovation and to achieve intended emission-reduction targets. ANS has developed a "Nuclear in the States Toolkit"[6] that outlines policies related to new and existing nuclear reactors for policymakers to consider as they develop policies to reduce emissions.

ANS recognizes the value of energy diversity[7] and believes that other low-emission energy technologies should be deployed as appropriate while recognizing the full range of benefits and drawbacks associated with each technology. For example, the need for backup electricity generation capacity or energy storage capabilities must be considered for intermittent generation sources, such as solar and wind. Further, competing priorities, such as wildlife protection and land use requirements, constrain the contributions of inherently diffuse energy sources. In all cases, policymakers should base energy generation choices on the complete set of attributes of energy technologies.[8]

For background and further information on this topic, visit www.NuclearConnect.org or www.ANS.org.

The American Nuclear Society, founded in 1954, is a not-for-profit professional society of more than 10,000 scientists, engineers, educators, and other professionals from universities, government, private laboratories, and industry devoted to the peaceful applications of nuclear science and technology. Position Statements are the considered opinions and judgments of the Society in matters related to nuclear science and technology. They are intended to provide an objective basis for weighing the facts in reaching decisions on important national issues.

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